

What is claimed is:

1. A liquid crystal device comprising:

5 a liquid crystal material characterized by spontaneous polarization, being applied signal for controlling a light transmittance of said material, wherein a voltage of said signal for writing data to said material is offset positively or negatively from 0 V at said material except during applying said signal.

10 2. The liquid crystal device claim 1 wherein wherein said signal is offset positively or negatively so that a light transmission through said liquid crystal material being driven by said signal becomes to be blocked.

3. A liquid crystal device comprising:

15 a first substrate including a first electrode on a first face thereof;

a second substrate including a second electrode on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second face each other;

20 a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates;

a first voltage generating circuit for supplying a voltage to said first electrode; and

a data signal circuit for supplying a data pulse to said second electrode,

25 wherein a voltage across said liquid crystal between said first and second electrodes is kept positively or negatively to a reference

voltage of said device except during said data pulse being applied.

4. The liquid crystal device in claim 3 wherein said data pulse is offset positively or negatively so that a light transmission through said liquid crystal material being driven by said pulse becomes to be blocked.

5. The liquid crystal device claim 3 or 4 wherein said second substrate having an active element electrically connected to said second electrode so as to electrically control a picture element.

6. The liquid crystal device claim 5 wherein said voltage supplied by said first voltage generating circuit is offset so that a voltage across said liquid crystal material between said first and second electrodes is kept positively or negatively to said reference voltage of said device except during said data pulse being applied.

7. A liquid crystal panel comprising:
a first substrate including a first electrode on a first face thereof;

a second substrate including a second electrode on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second face each other;

a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates;

a first voltage generating circuit for supplying a voltage to

said first electrode;

a data signal circuit for supplying a data pulse to said second electrode; and

a light source for emitting more than monochromatic lights,
5 each of said monochromatic lights being emitted time divisionally toward said first or second substrates,

wherein a voltage across said liquid crystal material between said first and second electrodes is kept positively or negatively to a reference voltage of said device during except said data pulse being applied.

10 8. A liquid crystal panel comprising:

a first substrate including a first electrode on a first face thereof;

15 a second substrate including a second electrode on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second face each other;

a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates;

20 a first voltage generating circuit for supplying a voltage to said first electrode;

a data signal circuit for supplying a data pulse to said second electrode; and

25 polarizer films provided on each outer face of said first and second substrates,

wherein a voltage across said liquid crystal material between

said first and second electrodes is kept positively or negatively to a reference voltage of said panel except during said data pulse being applied so that said liquid crystal material blocks a light transmission through said liquid crystal material.

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9. A liquid crystal display panel comprising:

a first substrate including a common electrode on a first face thereof;

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a second substrate including data signal electrodes, scanning electrodes, and switching elements which are connected to one of said data signal electrodes and one of said scanning electrodes on a second face thereof, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second faces face each other;

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a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates;

a common reference voltage generating circuit for defining a reference voltage of said data signal electrode; and

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a common electrode voltage generating circuit for supplying a voltage to said common electrode, wherein said common voltage is offset to positive or negative voltages.

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10. The liquid crystal display panel of claim 9 wherein said liquid crystal material having spontaneous polarization is ferroelectric liquid crystal material.

11. The liquid crystal display panel of claim 9 wherein said first substrate has a color filter.

12. A liquid crystal display panel comprising:
5 a first substrate including a common electrode on a first face thereof;

a second substrate including data bus lines, scanning bus lines, and switching elements which are connected to one of said data bus lines and one of said scanning bus lines on a second face thereof, wherein
10 said second substrate and said first substrate are sealed spaced apart so that said first and second faces face each other;

a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates; and

a common electrode voltage generating circuit for supplying a
15 voltage to said common electrode; and

a common reference voltage generating circuit for defining a reference voltage of said data bus lines, wherein said reference voltage is offset to positive or negative voltages.

20 13. The liquid crystal display panel of claim 12 wherein said liquid crystal material having spontaneous polarization is ferroelectric liquid crystal material.

25 14. The liquid crystal display panel of claim 12 wherein said first substrate has a color filter.

15. The liquid crystal display panel claim 12 further comprising:
polarizer films provided on each outer faces of said first and second
substrate, wherein said common voltage is offset so as that a light
transmission of said liquid crystal material becomes to be block.

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16. The liquid crystal display panel claim 12 further comprising:
a light source emitting a plurality of monochromatic colors, wherein each
monochromatic color is emitted by said light source time divisionally in
synchronism with a operation of said liquid crystal display panel.

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